SOME NORTH AMERICAN TREMELLACEAE, DACRYOMYCETACEAE, AND AURICULARIACEAE

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In 1899 I compared the authentic specimens of tremellaceous fungi in the Schweinitz herbarium in Philadelphia with collections which I had accumulated while living in Vermont, where many of the Schweinitzian species are frequent. From time to time I have studied the types of species described by Berkeley and Curtis and by Peck and made comparisons with them. My deep interest in Professor Coker's recent work 'The Lower Basidiomycetes of North Carolina'[1] and in Mr. Lloyd's studies and comments on various species leads me to present the following notes:

TREMELLACEAE

Peziza concrescens Schw. and *Tremella reticulata* (Berk. & Curtis) Farl. are white species of *Tremella,* growing on the ground, of which the former is so soft that it may possibly be confused by collectors with the white plasmodium of a Myxomycete. This species has a long north and south range, for I have one specimen collected by Langlois in Louisiana, which Patouillard referred to *Tremella fuciformis;* the original collection was made by Schweinitz in North Carolina and again near Philadelphia, when its basidiomycetous nature was recognized and it was published as *Dacryomyces pellucidus* Schw. This species is the *Corticium tremellinum* Berk. & Ravenel, collected by Ravenel in Georgia and referred to by Farlow in Rhodora **10:** 10. 1908. My collection was made by a mountain roadside between Lake Dunmore and Silver Lake, Vermont, where several fructifications were growing up from the ground incrusting herbs. In cases where several herbs were near enough together so that a fructification was using them all as supports,

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[1] Elisha Mitchell Scientif. Soc. Jour. **35**: 113–182. *pl. 23, 30–66.* 1920.

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the fructification sagged by its own weight into cup-shaped form in the space between the several supports. It was such a form which led Schweinitz to publish the original collection as a *Peziza*. When incrusting only two stems the fructification sagged between the supports in the form of a whitish pellucid membrane. By its dependence for support of its mass upon herbaceous stems and by absence of projecting self-supporting lobes, *Tremella concrescens* is distinguishable at sight from *T. reticulata*, which is also white and grows on the ground but stands up a self-supporting, coralloid mass with many short cylindric branches. *T. reticulata* has been frequently collected in the northern United States from Vermont westward to Minnesota but with southern limit the North Carolina station given by Coker.

Tremella fuciformis Berk. is the third species of the group. This is a tropical species ranging from Brazil through the West Indies into the southern United States as far north as North Carolina. It has been collected but few times and has always been found growing on wood. There has been a tendency to confuse both *T. reticulata* and *Dacryomyces pellucidus*, the synonym of *T. concrescens*, with *T. fuciformis* but the growth from the ground, not wood, seems a reliable means of distinction, although there are additional features of distinguishing *T. fuciformis* when it has to be determined in the herbarium from dried specimens not accompanied by notes as to substratum. *T. fuciformis* dries with the upper portions white and the basal portion in the region in and near the wood ochraceous tawny; it agrees with *T. reticulata* in being self-supporting and branched, but in dried condition main trunk, main branches, and final branches are not at all cylindric but flattened into leaf-like form with branches at the margins of the main trunk and main branches and all in a common plane although more or less crisped by the great number of ultimate branches. There are differences between these three species in microscopic characters which are given in the following more complete descriptions with synonymy, etc.

Tremella concrescens (Schw.) Burt, n. comb. Plate 3, fig. 1.

Peziza concrescens Schweinitz, Naturforsch. Ges. Leipzig by Dr. Baur himself not to be constant; and I presume it will ultimately be found that his observation was made on an injured specimen.

In his latest paper on the classification of the Pleurodira Dr. Baur gives as one of the characters of the family Chelydidæ the presence of a nuchal shield, and includes *Elseya*, overlooking that that genus was established on the absence of a nuchal.

So much for Dr. Baur's accuracy in dealing with facts. His want of judgment as to what constitute family characters is best shown in his classification of the Pleurodira, where one neural plate more or less (often merely an individual peculiarity) is regarded as a family character, except in the Chelydidæ, where, better informed, he admits their variation from 7 to 0! *Pelomedusa*, which is placed by him with *Podocnemis* in the family Pelomedusidæ, is beyond question much more nearly related to *Sternothærus*, which, in his system, forms another family. As there is not at present the slightest reason for splitting the Pelomedusidæ, or Pleurodira with mesoplastra, into several families, the new terms Mesoplastralia and Amesoplastralia were uncalled for, and only show, together with the proposal of a new name (*Erymnochelys*) to replace *Dumerilia*, preoccupied and a synonym of *Podocnemis*, the unfortunate fondness of the author for coining names whenever the slightest opportunity offers.

*A Comparison of the Cretaceous Fish-fauna of Mount Lebanon with that of the English Chalk**. By A. Smith Woodward, F.G.S., F.Z.S.

No detailed comparison having hitherto been instituted between the Cretaceous fish-fauna of Mount Lebanon and that of the English Chalk, which belongs to a well-determined horizon, the author has undertaken a general survey of the genera, with the result that the two faunas are proved to have more forms in common than hitherto supposed. The Selachian fishes are scarcely comparable, *Notidanus* and *Squatina* being the only genera as yet recognized in the two formations, although the English teeth named *Lamna rhaphiodon* seem to belong to the Syrian shark named *Rhinognathus*; on the whole, those of Mount Lebanon exhibit the most modern facies, all traces of Hybodont Sharks and of *Ptychodus* being wanting. Chimæroids are unknown at Mount Lebanon, but abundantly met with in the English Chalk. Among Ganoids there are representatives of the Pycnodonts both in the Lebanon (*Palæobalistum*, *Coccodus*, *Xenopholis*) and in England (*Cœlodus*), but no identical genera can yet be recognized. Rhombic-scaled Ganoids are rare in the English Chalk (*Lophiostomus*, *Neorhombolepis*), and unknown in Mount Lebanon; traces of Acipenseroids also occur in the former, but have not been discovered in the latter; and at least one Crossopterygian genus occurs plentifully in England (*Macropo-*

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* Abstract of paper read before Section C, British Association, Bath, September 1888.

ma), while no certain remains have been detected in the Syrian beds. *Belonostomus*, however, is common to the two formations, one species having been described from Mount Lebanon under the name of *Rhinellus laniatus*.

Of Physostomous Teleosteans, the great early families represented in the Chalk of England and the Upper Cretaceous of North America by *Portheus*, *Ichthyodectes*, *Protosphyræna*, and *Pachyrhizodus* are quite unknown in the deposits of Mount Lebanon; but in the latter locality *Enchodus* is abundant, having been described under the synonym of *Eurygnathus*, and this is accompanied by a closely-allied genus, *Eurypholis*, only differing in the possession of a few dermal scutes. The English *Pomognathus* may also be regarded as represented at Mount Lebanon, for the so-called *Phylactocephalus* merely differs in the presence of extremely delicate minute scales, which would not be preserved in a matrix of the nature of the Chalk; and *Aspidopleurus* (Mount Lebanon) possesses scutes undistinguishable from the detached examples long known in the English Chalk under the name of *Prionolepis*. *Dercetis*, also, is met with abundantly in the Syrian beds, being described under the synonym of *Leptotrachelus*. Among Elopine Clupeoids, some undescribed forms occur in the English Chalk, and one from Mount Lebanon has been erroneously assigned to the genus *Clupea* ('*C. Lewisii*'); and the supposed Salmonoid, *Osmeroides*, is common to the two formations, though inferior in size at the last-named locality. In the Syrian deposits, however, there are many more specialized Physostomi, such as *Cheirothrix*, *Spaniodon*, *Opistopteryx*, *Rhinellus*, *Scombroclupea*, *Diplomystus*, and *Clupea*, of which no traces appear to be discoverable in collections of English Chalk fossils. Among Physoclystous Teleosteans but few genera are common to the two formations under comparison. *Hoplopteryx*, with perhaps *Beryx*, represents the Berycidæ in both localities; but only a single imperfect specimen from the English Chalk can yet be assigned to any higher type, namely, *Platax* (?) *nuchalis*. At Mount Lebanon more specialized Physoclysti are numerous, as *Platax*, *Imogaster*, and *Pycnosterinx*; although to the latter have been erroneously assigned certain extraneous forms, including at least one well-marked Berycoid, the so-called *Pycnosterinx Lewisii*.

The conclusion is thus arrived at, that in those respects in which the Lebanon fish-fauna differs from that of the English Chalk, it exhibits greater specialization. Considered alone, therefore, it is distinctly of a more modern type than the latter, although the beds in which it occurs are regarded, from other evidence, as being of Senonian or even Turonian age.

On Bucklandium diluvii, *König, a Siluroid Fish from the London Clay of Sheppey**. By A. Smith Woodward, F.G.S., F.Z.S.

In his well-known 'Icones Fossilium Sectiles,' pl. viii., No. 91,

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* Abstract of paper read before Section C, British Association, Bath, September 1888.

Vermont: Grand View Mt., *E. A. Burt;* Middlebury, *E. A. Burt.*

Pennsylvania: comm. by C. H. Peck under the name *T. vesicaria; Michener, 1212,* type of *Corticium tremellinum* var. *reticulatum,* (in Curtis Herb., 3942).

Minnesota: Minneapolis, *M. L. Whetstone,* comm. by F. Weiss, type of *T. Sparassoidea* (in Mo. Bot. Gard. Herb., 56256).

T. fuciformis Berkeley, Hooker's Jour. Bot. **8**: 277. 1856; Linn. Soc. Bot. Jour. **10**: 340. 1868; Sacc. Syll. Fung. **6**: 782. 1888; A. Möller, Bot. Mitt. a. d. Tropen **8**: 115. *pl. 1. f. 5; pl. 4. f. 13.* 1895; Farlow, Rhodora **10**: 11. 1908; Lloyd, Myc. Writ. **5**. Myc. Notes 55: 790. *text f. 1188.* 1918; Coker, Elisha Mitchell Scientif. Soc. Jour. **35**: 140. *pl. 38, 56. f. 7.* 1920.

Illustrations: as given above and Engl. & Prantl, Nat. Pflanzenfam. (**I**:1**): 93. *text f. 60 H.*

Type: probably in Kew Herb.

Fructifications solitary or cespitose, gelatinous, rather tough, erect, white, repeatedly lobed or forked, with the peripheral lobes thin, flat, much crinkled or fluted, drying with the upper portion white and basal portion ochraceous tawny; basidia subglobose, 7–10×6–7½ μ; spores hyaline, even, 5–6×4–4½ μ, as found in a preparation of the hymenium.

Mass of fructifications about 2 cm. high and 3–5 cm. in diameter in northern specimens, attaining larger size in Brazil.

On dead wood. North Carolina, West Indies, and Brazil. October to January.

Tremella fuciformis occurs on wood in a rosette-like mass of thin, crinkled, and fluted lobes, white and drying white except in the region of attachment to the wood where the color is ochraceous tawny; the basidia and spores are subglobose and small.

Specimens examined:

Cuba: *C. Wright, 233* (in Curtis Herb.).

Porto Rico: Bayamon, *J. A. Stevenson, 6765* (in Mo. Bot. Gard. Herb., 55055).

Other white species of tremellaceous fungi occurring on a wood substratum are *Exidia alba* and *E. candida. E. alba* is frequent in the middle west from Wisconsin southward to Alabama along the northern range of *Tremella fuciformis.* *E. alba* was formerly confused with *E. albida* of Europe until Lloyd pointed out that the former is clearly distinct from any known white tremelline species of Europe by the presence of gloeocystidia in its hymenium. Lloyd included *E. alba* in the little-known Australian genus *Seismosarca* but I am reluctant to follow him in this respect, for since genera are merely rather natural groups of species of convenient size for taxonomic work, it seems unnecessary and a great pity to segregate already small genera on the basis of every positive character which would make a species noteworthy. *E. candida* is known so far from the state of Washington only.

The details of the above species are as follows:

Exidia alba (Lloyd) Burt, n. comb.

Exidiopsis alba Lloyd, Myc. Writ. **4**. Letter 44:8. 1913.—*Seismosarca alba* Lloyd, Myc. Writ. **5**. Myc. Notes 45: 629. 1917; Myc. Writ. **6**. Myc. Notes 65: 1045. *f. 1928, 1929.* 1921.

Fructifications large, cerebriform, subfoliaceous or with rounded convolutions, white or somewhat creamy, marginal portions discoloring in the herbarium to tawny olive and Sayal-brown and the more central regions approaching fuscous; gloeocystidia somewhat colored, cylindric, flexuous, up to 30×6 μ; basidia subglobose, 10×9 μ; spores hyaline, curved, even, $9\text{–}10 \times 4\frac{1}{2}$ μ; edible.

Fructifications 1–4 cm. high, 2–10 cm. in diameter.

On dead wood. According to literature probably ranging from New York to Minnesota and southward to Alabama but known to me by specimens from Wisconsin to Alabama only. June to October. Frequent.

Within the basin of the Mississippi *E. alba* is the common species occurring in large, white or slightly creamy masses on dead wood; reference of collections to this species may be confirmed by presence of the conspicuous gloeocystidia when a bit of the hymenium is crushed in water under a cover glass. Dr. Glatfelter found this species so abundant in Forest Park, St. Louis, that he tested its edible properties, and he noted on the collection which was preserved that this species is "edible but not delicious."

Specimens examined:

Wisconsin: Blue Mounds, *E. T. & S. A. Harper, 868.*

Missouri: Creve Coeur, *L. O. Overholts* (in Mo. Bot. Gard. Herb., 57678); St. Louis, *N. M. Glatfelter, 49* (in Mo. Bot. Gard. Herb., 57677).

Alabama: Montgomery, *R. P. Burke, 78* (in Mo. Bot. Gard. Herb., 13540).

E. candida Lloyd, Myc. Writ. 5. Myc. Notes 44: 620. *text f. 880, 881.* 1917.

Fructifications effused, somewhat pulvinate, with the surface tuberculate and having irregular folds, white or grayish, discoloring to bister in the herbarium when dry, and cracking and curling up from the substratum; basidia 12–15×10 μ; spores hyaline, even, 12–13×4–4½ μ, stated by Lloyd to be 16×8 μ; no gloeocystidia.

Fructification 2–5 mm. thick, spread out over areas 10 cm. and more in diameter.

On rotten *Corylus*. Washington. August.

This species is noteworthy by its broadly effused and relatively thin fructifications and spores at least twice as long as broad.

Specimens examined:

Washington: Bingen, *W. N. Suksdorf, 751.*

In December, 1899, I studied the specimen of *Tremella aurantia* Schw. in Herb. Schweinitz in Philadelphia, before it had been examined by either Lloyd or Coker. I noted that it was on an oak limb which was also bearing *Stereum rameale.* The preparation which I have of a bit of the hymenium of this authentic specimen still shows the longitudinally cruciately septate basidia and subglobose, hyaline, even spores about 10×8 μ. These dimensions do not exclude *Tremella mesenterica,* but the form and general aspect of the fructification and its less brittle structure made me regard *T. aurantia* as a species distinct from the latter. In the following March I received from Professor P. H. Rolfs, then of Clemson College, South Carolina, a fine specimen from that region which measured 4½ ×3×2½ cm. high when fresh. This specimen agreed in all respects with my notes, preparations, and remembrance of the authentic *T. aurantia* in Herb. Schweinitz and with the original description of this species which was based on specimens collected at Salem, North Carolina. Later in the year Professor Rolfs sent me another gathering of *T. aurantia.* These specimens from Professor Rolfs upon being split open proved to be white and fibrous-fleshy within, being cogeneric in this respect with *Naematelia encephala,* and they show this structure well at the present time, hence *Tremella aurantia* should be transferred to *Naematelia.* Coker has made this disposition of the species but under the name *Naematelia quercina* Coker. The descriptions and synonymy of this species and of the related *N. encephala* follow:

Naematelia aurantia (Schw.) Burt, n. comb.

Tremella aurantia Schweinitz, Naturforsch. Ges. Leipzig Schrift. **1**: 114. 1822; Am. Phil. Soc. Trans. N. S. **4**: 185. 1832; Fries, Syst. Myc. **2**: 213. 1823; Epicr. 588. 1838; Sacc. Syll. Fung. **6**: 781. 1888; Lloyd, Myc. Writ. **3.** Myc. Notes, Old Species 1: 11, with *text f 225* doubtful. 1908.—*Naematelia quercina* Coker, Elisha Mitchell Scientific Soc. Jour. **6.** 135. *pl. 23, f. 1; pl. 58, f. 1–2.* 1920; Lloyd, Myc. Writ. **35**: Myc. Notes 64: 1024. 1921.—An *Sparassis tremelloides* Berkeley, Grevillea **2**: 6. 1873? See Lloyd, Myc. Writ. **6.** Myc. Notes 64: 1025. 1921.—Not *Tremella aurantia* of Farlow, Appalachia **3**: 248. 1883, nor of Coker, Elisha Mitchell Scientif. Soc. Jour. **35**: 163. 1920.

Illustrations: Coker, *loc. cit.*

Fructifications a hemispherical or more elongated, cockscomb-shaped mass divided nearly to the substratum into a few—about 3–6—somewhat flattened and crumpled lobes, xanthine-orange (aurantiacus of Saccardo's 'Chromotaxia'), drying ochraceous orange to walnut-brown in the herbarium, and solid, fibrous, and whitish within when dried; basidia subglobose, longitudinally cruciately septate, 15–18 × 12–15 μ, often about 15 μ in diameter; spores hyaline, even, subglobose, 9–12 × 8–9 μ.

Fructifications when fresh up to 2½ cm. high by 4½ × 3 cm., contracting when drying to masses 5–7 mm. high by 12–16 × 6–12 mm.

On dead wood of frondose species. New Jersey to South Carolina. December to March. Rare.

Coker has published that the color is orange-yellow inside and out except for a thin white membrane about 0.7 mm. from the surface which follows all the convolutions and gives a marbled appearance to the cut surface. In the three gatherings before me which have been kept in the herbarium 20 to 25 years, the whole interior is as whitish within in its dried condition as it is in *Naematelia encephala* from which *N. aurantia* is distinguished in aspect by its larger, orange-colored fructifications which are divided nearly to the substratum into a few large lobes and by its occurrence on dead wood and dead saplings of oak and other frondose species.

Specimens examined:

Exsiccati: Ell. & Ev., N. Am. Fungi, 1719, under the name *Naematelia encephala*—three of the fructifications comprising the specimen in Mo. Bot. Gard. Herb. copy are *N. aurantia* and the fourth is *Tremella mesenterica;* Ell. & Ev., Fungi Col. 1118, under the name *N. encephala.*

New Jersey: Newfield, *J. B. Ellis,* in Ell. & Ev., N. Am. Fungi, 1719, and Fungi Col., 1118.

North Carolina: *Schweinitz,* type (in Herb. Schweinitz).

South Carolina: Clemson College, *P. H. Rolfs, 3, 1888.*

N. encephala (Willd.) Fries, Obs. Myc. **2**: 370. 1818; Syst. Myc. **2**: 227. 1823; Epicr. 591. 1838; Hym. Eur. 696. 1874; Berkeley, Outl. Brit. Fung. 290. 1860; Sacc. Syll. Fung. **6**: 793. 1888.

Tremella encephaliformis Willdenow, Bot. Mag. **2**: 17. *pl. 4. f. 14.* 1788.—*Naematelia encephaliformis* (Willd.) Coker, Elisha Mitchell Scientif. Soc. Jour. **35**: 137. 1920.—*Tremella encephala* (Willd.) Persoon, Syn. Fung. 623. 1801; Myc. Eur. **1**: 98. 1822; Engl. & Prantl, Nat. Pflanzenfam. (I: 1**): 94. 1897.

Illustrations: Willdenow, *loc. cit.;* Stevenson, Brit. Hym. **2**: 316. *text f. 99.* 1886; Smith, Brit. Basidiomycetes, 452. *text f. 117.* 1908; Brefeld, Untersuch. Myk. **7**: *pl. 8. f. 20.* 1888.

Fructifications solitary or clustered, nearly sessile, pulvinate, plicate-rugose, solid, drying cinnamon to Natal-brown externally and white and fibrous within; basidia 12–15 μ in diameter; spores hyaline, even, subglobose, 8–10 × 7–9 μ.

Dried fructifications 3–10 mm. in diameter, 3–5 mm. high.

On dead, fallen branches of coniferous species. Ontario to North Carolina. August. Rare.

Naematelia encephala has small fructifications which are nearly subglobose, scarcely more than rugose on the surface and not deeply divided; attachment to the substratum is usually by a point rather than by a broad resupinate surface; the substratum is pine or spruce in all specimens known to me.

Specimens examined:

Exsiccati: Berkeley, Brit. Fungi, 291; Krieger, Fungi Sax., 1008; Sydow, Myc. Germ., 58.

England: Berkeley, Brit. Fungi, 291.

Germany: Saxony, *H. & P. Sydow*, in Sydow, Myc. Germ., 58; Winterberge, *G. Wagner*, in Krieger, Fungi Sax., 1008.

Canada: Ontario, Temagami, *H. von Schrenk* (in Mo. Bot. Gard. Herb., 57052).

New Hampshire: Tuckerman's Ravine, *W. G. Farlow* (in Mo. Bot. Gard. Herb., 5352).

Vermont: Middlebury, *E. A. Burt.*

Under the name *Tremella nucleata* Schweinitz described a species of quite different structure from *Naematelia encephala* and *N. aurantia* Fries transferred this species to *Naematelia* because dried specimens contain scattered, white, spherical or lens-shaped calcareous masses imbedded in the fructification. These masses were termed nuclei by Fries but they are not of organic nature, being merely concretions[1] of calcium oxalate present in the gelatinous fructification and quite different from the white fibrous structure which forms the interior of *N. aurantia* and *N. encephala*. Some species of *Exidia* contain calcareous masses similar to those of *T. nucleata,* and since the spores of the latter are of the elongated form by which in herbarium work we distinguish *Exidia* from *Tremella,* I transfer this species to *Exidia,* as follows:

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[1] Topin, Rev. Myc. **25**: 134. *pl. 233. f. 21.* 1903.

Exidia nucleata (Schw.) Burt, n. comb.

Tremella nucleata Schweinitz, Naturforsch. Ges. Leipzig Schrift. **1:** 115. 1822.—*Naematelia nucleata* (Schw.) Fries, Epicr. 592. 1838; Hym. Eur. 696. 1874; Berkeley, Outl. Brit. Fung. 290. 1860; Peck, N. Y. State Mus. Rept. **24:** 83. 1872; Berkeley & Curtis, Grevillea **2:** 20. 1873; Morgan, Cincinnati Soc. Nat. Hist. Jour. **11:** 93. 1888; Sacc. Syll. Fung. **6:** 793. 1888; Coker, Elisha Mitchell Scientif. Soc. Jour. **35:** 136. *pl. 23. f. 3; pl. 41. f. 1; pl. 56. f. 3–5.* 1920.—An *Exidia gemmata* (Lév.)?

Illustrations: Coker, *loc. cit.*

Type: in Herb. Schweinitz.

Fructification effused, plane, somewhat gyrose and undulate, white at first, shrinking to a membrane in drying and becoming tawny olive to mummy-brown and containing a few scattered, conspicuous, white, subglobose concretions of calcium oxalate about 1/5–1/3 mm. in diameter; basidia 8–12 × 6–8 μ; spores hyaline, even, curved, 8–9 × 3–4 μ.

Covering areas 5 mm.–3 cm. in diameter, not thicker when dry than the imbedded concretions.

On fallen limbs of frondose species. Maine to Louisiana and westward to California; occurs also in Europe. September to March. Widely distributed but not common.

Exidia nucleata is noteworthy by fructifications so thin that they suggest a *Sebacina* but are gelatinous throughout and often elevated or pinched up in the center, by the tawny olive color assumed in drying, and by the more or less numerous, white, chalky, seed-shaped concretions. I know *Exidia gemmata* of Europe only by the specimen received under this name from Bourdot; this specimen agrees in all respects with our *E. nucleata*.

Specimens examined:

Exsiccati: Ellis, N. Am. Fungi, 520; Ravenel, Fungi Car. **4:** 82.

France: Allier, St. Priest, *H. Bourdot, 12147.*

Maine: Orono, *F. L. Harvey* (in Mo. Bot. Gard. Herb., 1733, 5353).

Vermont: Middlebury, *E. A. Burt.*

New Jersey: *J. B. Ellis,* in Ellis, N. Am. Fungi, 520.

North Carolina: *Schweinitz*, type (in Curtis Herb.).
Alabama: *Peters*, in Ravenel, Fungi Car. **4**: 82.
Louisiana: St. Martinville, *A. B. Langlois, by.*
Michigan: Ann Arbor, *C. H. Kauffman* (in Mo. Bot. Gard. Herb., 58674).
California: Santa Catalina Island, *L. W. Nuttall, 524, 1012*, comm. by Field Mus. Nat. Hist. Herb. (in Mo. Bot. Gard. Herb., 57624, 57683).

Another Schweinitzian species is also noteworthy by containing more or less numerous, small, white, chalky concretions although not so noted by Schweinitz. This is his *Exidia spiculata*, a species of which I made gatherings in Vermont on rotting willow and other frondose species, growing from cracks in the bark.

E. spiculata Schweinitz, Am. Phil. Soc. Trans. N. S. **4**: 185. 1832; Sacc. Syll. Fung. **6**: 776. 1888; Coker, Elisha Mitchell Scientif. Soc. Jour. **35**: 151. 1920.

Type: in Herb. Schweinitz.

Growing out from cracks in the bark in elongated masses, with crumpled, rugose surface, about 3 mm. high, 2–4 mm. wide, 10–12 mm. long, between sepia and clove-brown when wet, shrinking when dried to a thin, fuscous-black membrane with veined and wrinkled surface and now showing white, seed-like concretions $^1/_5$–½ mm. in diameter; basidia 9 × 6 μ; spores simple, hyaline, curved, 9–10 × 4 μ.

On bark of fallen, decaying limbs of *Salix*, *Betula*, etc. Vermont to Pennsylvania. September to March.

E. spiculata and *E. nucleata* differ from other species of *Exidia* by containing small, whitish, seed-like concretions. *E. spiculata* is darker-colored than *E. nucleata*, much thicker, and with a crumpled surface. The surface was described by Schweinitz as papillate; perhaps he used the term in a broad way, for I fail to find true papillae either on the surface of the specimen in Herb. Schweinitz or of my collections.

Specimens examined:

Vermont: Lake Dunmore, *E. A. Burt*, two collections; Middlebury, *E. A. Burt*, two collections.
New York: Altamont, *E. A. Burt.*

Pennsylvania: Bethlehem, *Schweinitz,* type (in Herb. Schweinitz).

Tremella colorata Peck, N. Y. State Mus. Rept. **25:** 83. 1873; Sacc. Syll. Fung. **6:** 788. 1888.

I have not collected this species but the color reactions of the type are so remarkable that, if constant, they should distinguish the species from all others known to me. In the first place the ash bark and wood for a distance about the fructification are now, fifty years since the collection was made, still conspicuously stained vinaceous-drab as noted by Peck. Furthermore, in my microscopical, glycerin mount of this fungus, stained with Gruebler's alcoholic eosin and the color set with a trace of acetic acid, the basidia and hyphae are vinaceous-lilac instead of the brighter red usually given by the eosin. The basidia are spherical, 13–15 μ in diameter, longitudinally cruciately septate, mostly still immature although occasionally one may be found bearing slender sterigmata up to 30 μ long; only four spore-like bodies have been found; all are hyaline, simple, even, curved, two are 7 × 4½ μ and the other two 15 × 6 μ. It seems improbable that the spores are colored, globose, 12–15 μ in diameter, as published by Peck. Should an *Exidia* be collected having color characters and basidia as noted, comparison with the type as to other characters will probably demonstrate that it is *T. colorata* Pk.

Tremella subcarnosa Peck, N. Y. State Mus. Rept. **32:** 36. 1879; N. Y. State Mus. Bul. **1**^{2}: 15. 1887; Sacc. Syll. Fung. **9:** 258. 1891.

Examination of the type in N. Y. State Mus. Herb. shows that this fungus is not a Basidiomycete but rather one of the *Tubercularieae.*

So many species of *Tremellaceae* had been published as species of *Thelephora, Stereum,* and *Corticium* and were distributed under these genera in herbaria that I have already published[1] for the convenience of students of the *Thelephoraceae* an account of the central-stemmed tremelloid genus *Tremellodendron,* the reflexed *Eichleriella,* and the resupinate *Sebacina.*

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[1] Mo. Bot. Gard. Ann. **2:** 731–770. 1915.

We have a few species of tremellaceous fungi which are hydnoid in general aspect and belong in *Heterochaete*, a genus defined as follows:

HETEROCHAETE Patouillard, a genus of resupinate tremellaceous fungi whose species have the general aspect of species of *Odontia* with cystidia clustered in the granules and with the basidia longitudinally cruciately septate. Our North American species are *H. andina*, *H. gelatinosa*, *H. sublivida*, *H. microspora*, and *H. Shearii*—none of which are known from north of District of Columbia.

Heterochaete andina Patouillard & Lagerheim, Soc. Myc. Fr. Bul. **8**: 120. *pl. 11. f. 2.* 1892; Sacc. Syll. Fung. **11**: 144. 1895.

Illustrations: Patouillard, *loc. cit.*

Fructifications resupinate, effused, thin, adnate, drying cartridge-buff, with margin whitish, the surface bearing numerous small, sharp-pointed granules; in structure 60–75 μ thick, composed mostly of densely interwoven, hyaline hyphae of uneven outline, 2½–3 μ in diameter, sometimes with hyphae slightly colored next to substratum; granules cylindric, 1201–50 μ high, 40–60 μ in diameter, containing an axile cluster of slightly colored or sometimes hyaline, granule-incrusted hyphae 3 μ in diameter which spread apart at the apex; basidia longitudinally septate, 12–16 × 6–9 μ; spores hyaline, even, curved, 12–14 × 4–7 μ.

On dead fallen branches of frondose species. Florida, Louisiana, and West Indies to Ecuador. November to April.

Heterochaete andina has the aspect of a nearly white *Odontia* or resupinate *Hydnum*, from both of which it is distinguished by the longitudinally cruciately septate basidia. One of the Louisiana specimens cited below is from a gathering which was determined by Patouillard for Langlois as *H. andina*.

Specimens examined:

Florida: Cocoanut Grove, *R. Thaxter*, *93* (in Mo. Bot. Gard. Herb., 43920, and in Farlow Herb.).

Louisiana: Baton Rouge, *Humphrey & Edgerton*, comm. by C. J. Humphrey, 5710 (in Mo. Bot. Gard. Herb., 9982); St. Martinville, *A. B. Langlois*, *2855*, *2988*, and *ah.*

Porto Rico: Bayamon, *J. A. Stevenson, 6303* (in Mo. Bot. Gard Herb., 55085).

Mexico: Orizaba, *W. A. & E. L. Murrill, 798* and *749 b* (in Mo. Bot. Gard. Herb., 54614 and 54653, and in N. Y. Bot. Gard. Herb.).

H. sublivida Patouillard, Soc. Myc. Fr. Bul. **24**: 2. 1908; Sacc. Syll. Fung. **21**: 449. 1912.

H. Burtii Bresadola, Ann. Myc. **18**: 51. 1920.

Fructifications resupinate, adnate, broadly effused, thin, drab-gray to light drab, the margin of the same color or paler; hymenium bearing more or less numerous granules or papillae with whitish tips; in structure 100–200 μ thick, composed of interwoven hyaline hyphae 2–2½ μ in diameter, and some masses of crystalline matter; granules 200–300 μ high by 100 μ in diameter at the base, composed of a few hyphae and much crystalline matter in masses; basidia longitudinally septate, 16–20 × 8–10 μ; spores white in collection on slide, flattened on one side, 8–10 × 5–6 μ.

Covering areas 6 cm. and more long, 3 cm. and more wide.

On bark of decaying frondose wood. Louisiana and the West Indies. October to March.

This species has been confused in American mycology with *Grandinia ocellata*, from which it is distinct by its longitudinally septate basidia; it may be easily separated from our other species of *Heterochaete* by its livid (drab of Ridgway) color. Nearly twenty years ago I shared with Bresadola a specimen of this fungus received from Langlois. The interruption to correspondence by the war prevented my calling Bresadola's attention to the fact that a portion of another gathering, communicated by Langlois to Patouillard, was published by the latter as a new species, hence the synonymy.

Specimens examined:

Louisiana: St. Martinville, *A. B. Langlois, 2882,* cotype of *H. sublivida, bk,* cotype of *H. Burtii,* and *at*

Cuba: El Yunque Mt., Baracoa, *L. M. Underwood & F. S. Earle, 371,* N. Y. Bot. Gard., Fungi of Cuba.

Porto Rico: Campo Alegre, *J. A. Stevenson, 6370* (in Mo. Bot. Gard. Herb., 55658).

H. gelatinosa (Berk. & Curtis) Patouillard, Soc. Myc. Fr. Bul. **8:** 120. 1892; Sacc. Syll. Fung. **11:** 144. 1895; Lloyd, Myc. Writ. **5.** Myc. Notes 59: 857. *text f. 1439.* 1919.

Kneiffia gelatinosa Berkeley & Curtis, Linn. Soc. Bot. Jour. **10:** 327. 1868; Sacc. Syll. Fung. **6:** 510. 1888.

Illustrations: Lloyd, *loc. cit.*

Type: in Kew Herb. and Curtis Herb.

Fructifications resupinate, effused, gelatinous, adnate, loosening from the substratum about the margin in drying, pallid at first, now pale smoke-gray, bearing granules about 9 to the mm.; in structure 500–800 μ thick, composed of densely interwoven and crowded, suberect, gelatinous-walled, hyaline hyphae 3 μ in diameter; granules about 100 μ high, about 50 μ in diameter at the base, containing an axile sheath of fine hyphae and an accumulation of crystalline matter; basidia longitudinally septate, 15 × 12 μ; spores hyaline, even, flattened on one side, 6–7½ × 4–5 μ.

Covers an area on bark of 5 × 4 cm., fractured on one side and one end.

Under side of rotten logs. Cuba. January.

Heterochaete gelatinosa is much thicker and more gelatinous than our other American species and has smaller spores than *H. andina* and *H. sublivida.* Its fructifications are so large and thick that it should attract notice of collectors but it would probably be classed as one of the *Hydnaceae* although it must be notably gelatinous.

Specimens examined.

Cuba: *C. Wright, 230,* type (in Curtis Herb.).

H. microspora Burt, n. sp.

Type: in Mo. Bot. Gard. Herb. and N. Y. Bot. Gard. Herb.

Fructifications resupinate, effused, at first a white floccose mycelium which persists later as a subiculum and bears on its surface a thin, waxy, hymenial layer, pinkish buff in the herbarium, more or less cracked, and showing through the cracks the filaments of the subiculum; in structure 100–150 μ thick,

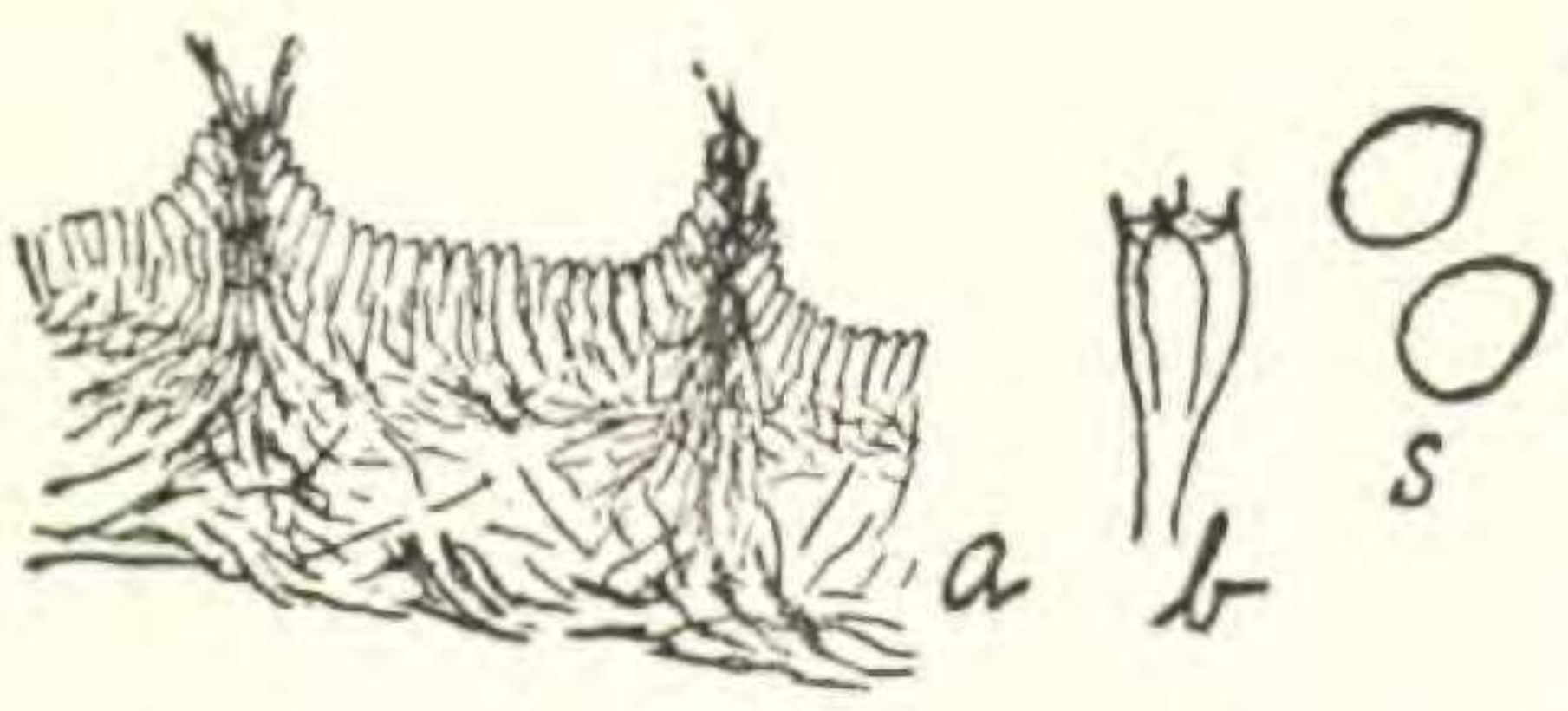

Fig. 1. *H. microspora.* Section of fructification × 92; *b*, basidium, and *s*, spores, × 665.

composed of hyaline, even, thin-walled hyphae 2 μ in diameter, very loosely interwoven next to the substratum and with occasional crystalline masses 6–12 μ in diameter; granules minute, numerous, protruding 60–90 μ, containing an axile sheaf of slightly brownish hyphae and some incrusting granules; basidia longitudinally septate, 10–15 × 6–12 μ; spores hyaline, even, flattened on one side, 5–5½ × 3½–4 μ.

The portions of fructifications received cover areas up to 4 × 2 cm.

On decorticated, decaying, coniferous wood. Mexico. January.

Heterochaete microspora is distinguished by its floccose subiculum and thin hymenial layer, small spores, and occurrence on a coniferous substratum.

Specimens examined:

Mexico: Motzorongo, near Cordoba, *W. A. & E. L. Murrill, 990,* type, and *995* (in Mo. Bot. Gard. Herb., 54617 and 54618 respectively, and in N. Y. Bot. Gard. Herb.).

H. Sheari Burt, n. comb.

Sebacina Sheari Burt, Mo. Bot. Gard. Ann. **2**: 758. *text f. 2.* 1915.

Type: in Burt Herb. and in Shear Herb.

Fructifications resupinate, effused, adnate, coriaceous, with minute granules or papillae, dull white, drying pale olive-buff, cracked, the margin determinate, entire; in structure 110–140 μ thick, with (1) a dense layer next to the substratum of longitudinally arranged, slightly brownish, even-walled hyphae 1½–2 μ in diameter, which branch and curve outward at a right angle and form (2) a fertile less compact layer 60–90 μ thick, of suberect, flexuous paraphyses 3 μ in diameter, of basidia about 15–20 μ below the surface, and of flexuous, cylindric-clavate gloeocystidia 40–45 × 6 μ, not emergent above the surface; granules protruding 50–150 μ, of about the same diameter at the base, and containing an axile sheaf of brownish hyphae coming from the layer next the substratum; basidia longitudinally septate, 15 × 9 μ; spores hyaline, even, simple, curved, 9–15 × 4½–6 μ.

Fructifications finally covering areas 7 cm. and more long, 1–2 cm. broad.

On dead *Berberis vulgaris* and other frondose limbs. District of Columbia and Island of Guam. October and March.

This species is noteworthy by its gloeocystidia. In the former description of this species under *Sebacina*, based on a gathering on *Berberis* in grounds U. S. Department of Agriculture, Washington, in 1902, I noted the presence of some granules on the hymenial surface. These granules are numerous in the specimen collected in 1819 on the Island of Guam, and by their structure in both gatherings require transfer of this species to *Heterochaete*. Since the only North American station is on the grounds of the United States Department of Agriculture, it seems probable that *H. Sheari* is an introduced species in our American flora coming from Guam or other distant lands of the Pacific.

Specimens examined:

District of Columbia: grounds U. S. Dept. Agr., Washington, *C. L. Shear, 1238*, type.

Island of Guam: *Edwards*, comm. by J. R. Weir, 10778 (in Mo. Bot. Gard. Herb., 56240).

DACRYOMYCETACEAE

Under the name *Tremella palmata*, Schweinitz described the commonest *Dacryomyces* of New England, southern Canada, and northern United States. This species ranges south to Louisiana and westward to Washington and north to Alaska. I have a single gathering on *Betula lutea* but other specimens known to me are on rotting coniferous wood. *D. palmatus* may occur as solitary or gregarious fructifications, with the lower portion tapering downward as in the authentic specimen in Schweinitz Herbarium and the illustrations by Coker and by Lloyd cited on a following page, or it may more usually and when better developed be a large, bright orange-yellow cluster of probably many fructifications so intimately coalescent as to appear a single, many-lobed mass with no differentiated base as in the illustration in Coker's pl. 48.

Dacryomyces palmatus (Schw.) Burt, n. comb. Plate 3, fig. 2.

Tremella palmata Schweinitz, Am. Phil. Soc. Trans. N. S. **4**: 186. 1832; Sacc. Syll. Fung. **6**: 782. 1888; Coker, Elisha Mitchell Scientif. Soc. Jour. **35**: 151. 1920.—*Dacryopsis palmata* (Schw.) Lloyd, Myc. Writ. **6**. Myc. Notes 64: 989. *pl. 159. f. 1762.* 1921.—*Dacryomyces chrysosperma* Berk. & Curtis, Grevillea **2**: 20. 1873; Sacc. Syll. Fung. **6**: 801. 1888.—*D. aurantius* Farlow, Appalachia **3**: 248. 1883; Coker, Elisha Mitchell Scientif. Soc. Jour. **35**: 163. *pl. 23. f. 10; pl. 48; pl. 63. f. 6, 7.* 1920.—An *Dacryomyces flabellum* Ellis & Everhart, Acad. Nat. Sci. Phila. Proc. **1894**: 324. 1894?

Illustrations: Coker, *loc. cit.;* Lloyd, *loc. cit.;* Gilbert, Wis. Acad. Trans. **16**: 1156. *pl. 83. f. 25, 26.* 1910.

Type: in Herb. Schweinitz.

Fructifications gregarious or cespitose and forming erect, gelatinous, rounded, brain-like, complicated masses with surface lobed and folded, slimy when wet, cadmium-yellow to ochraceous orange and drying the same color, penetrating the bark by a whitish, radicated base; basidia forked; spores colored like the fructification, curved, becoming 5–7-septate, 18–28 × 6–7μ.

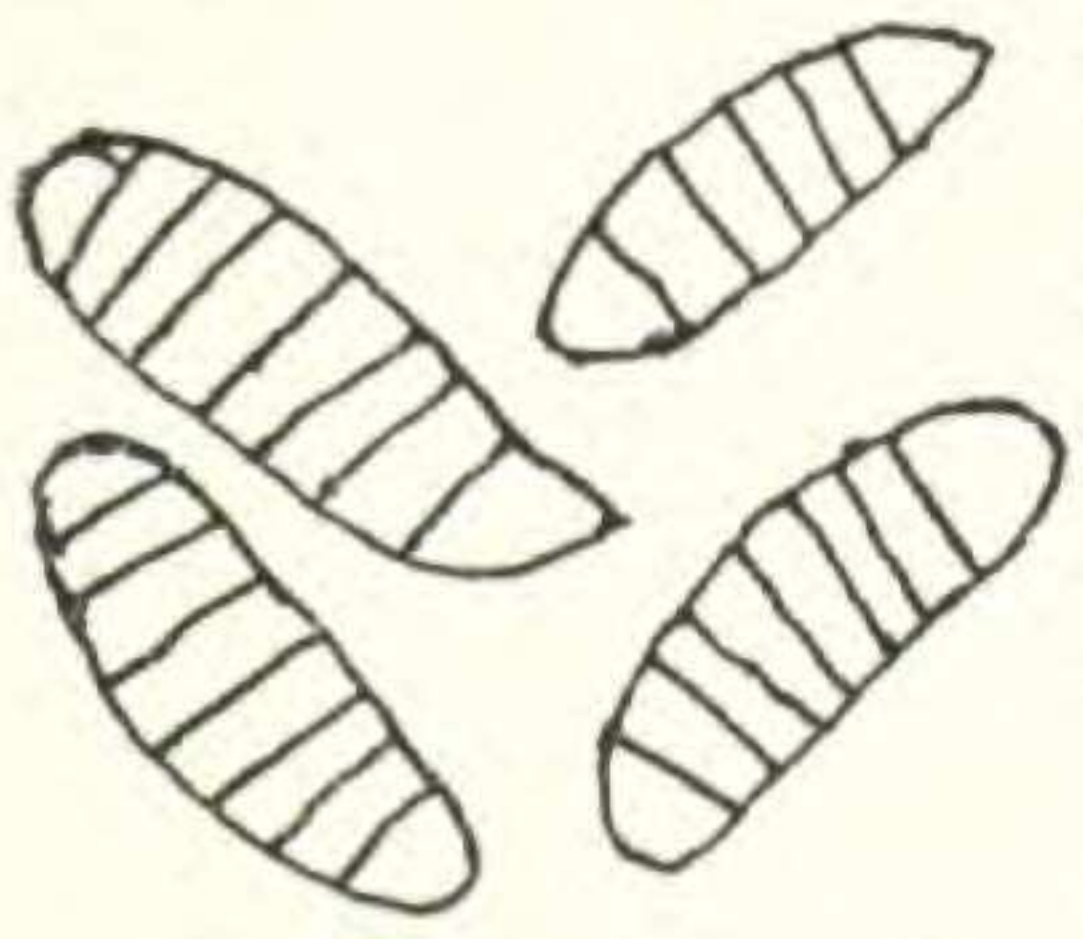

Fig. 2. *D. palmatus.* Spores of type × 665.

Mass fructifications up to 2 cm. high, 1–2 cm. broad, and 1–5 cm. long.

On coniferous stumps, logs, and brush. Canada to Louisiana and westward to British Columbia and Washington. July to March. Common in New England.

Dacryomyces palmatus is distinguished by its large size, bright orange-yellow color, and large 8-celled spores. Old mass forms attain the size of a large *Tremella;* some specimens of this species were distributed from Schweinitz's herbarium under the name *Tremella aurantia.* Young, gregarious specimens bear some resemblance in aspect to *Guepinia spathularia,* especially when dried, but the spores of the latter are only 8–10 × 4–4½ μ and usually simple or finally becoming only 2-celled.

Specimens examined:

Exsiccati: Ell. & Ev., N. Am. Fungi, 1697, under the name *Tremella aurantia*.

Canada: Ontario, Lake Rosseau, *E. T. & S. A. Harper, 808;* Temagami, *H. von Schrenk* (in Mo. Bot. Gard. Herb., 57049).

New Hampshire: *W. G. Farlow* (in Mo. Bot. Gard. Herb., 5304); *Miss S. Minns,* in Ell. & Ev., N. Am. Fungi, 1697; Shelburne, *W. G. Farlow* (in Mo. Bot. Gard. Herb., 57887).

Vermont: Middlebury, *E. A. Burt,* four collections: Ripton, *E. A. Burt,* two collections; Silver Lake, Salisbury, *E. A. Burt.*

Massachusetts: *Sprague, 778,* type of *D. chrysosperma* (in Curtis Herb., 6211); Worcester, *G. E. Francis, 69.*

Connecticut: Mansfield, *P. W. Graff, 42* (in Mo. Bot. Gard. Herb., 44796).

New York: East Galway, *E. A. Burt;* Floodwood, *E. A. Burt.*

Pennsylvania: Bethlehem, *Schweinitz,* type (in Herb. Schweinitz); Carbondale, *E. A. Burt.*

South Carolina: Clemson College, *P. H. Rolfs, 4.*

Alabama: Auburn, *L. M. Underwood & F. S. Earle* (in Mo. Bot. Gard. Herb., 5299); Montgomery, *R. P. Burke, 107* (in Mo. Bot. Gard. Herb., 21009).

Louisiana: St. Martinville, *A. B. Langlois.*

Michigan: Gogebic Co., *E. A. Bessey, 47, 124, 154, 348* (in Mo. Bot. Gard. Herb., 56541, 56566, 56576, 56633, respectively).

Wisconsin: Dells of the Wisconsin (in Mo. Bot. Gard. Herb., 57889); Madison, *L. H. Pammel* (in Mo. Bot. Gard. Herb., 57888).

British Columbia: Vancouver Island, *W. Trelease, 25* (in Mo. Bot. Gard. Herb., 5298).

Washington: Bingen, *W. N. Suksdorf, 688.*

Dacryomyces abietinus (Pers.) Schroeter, more frequently referred to as *D. stillatus,* is a common European species having spores 7-septate and of the same dimensions as those of *D. palmatus.* This species occurs occasionally in the United States; it differs from *D. palmatus* in having very small, compact fructfiications which are nearly always on old, decorticated, decaying pine wood. In only one of the specimens cited below do the fructifications burst out from the bark. The name *D. stil-*

latus came into extensive use, because there was formerly a strong tendency among many European botanists to use the first binomial containing the true genus of the plant without regard to the priority of the specific portion of the binomial. When publishing and defining his new genus *Dacryomyces*, Nees, as he states, took Persoon's *Tremella abietina* and renamed it *Dacryomyces stillatus* Nees. How generally Nees was followed in this instance is shown in the following synonymy. It is fortunate that such cases as this are the exception. In passing it may be noted that Nees spelled his genus *Dacryomyces*.

D. abietinus (Pers.) Schroeter, Krypt. Fl. Schlesien **3**: 400. 1888; Coker, Elisha Mitchell Scientif. Soc. Jour. **35**: 161. *pl. 23. f. 12; pl. 63. f. 3, 4.* 1920.

Tremella abietina Persoon, Obs. Myc. **1**: 78. 1796; Syn. Fung. 627. 1801; Myc. Eur. **1**: 104. 1822.—*Dacryomyces stillatus* Nees, System, 89. *pl. 7. f. 90.* 1816; Fries, Syst. Myc. **2**: 230. 1823; Epicr. 592. 1838; Hym. Eur. 699. 1874; Berkeley, Outl. Brit. Fung. 291. *pl. 18. f. 8.* 1860; Peck, N. Y. State Mus. Rept. **22**: 88. 1869; Berk. & Curtis, Grevillea **2**: 20. 1873; Morgan, Cincinnati Soc. Nat. Hist. Jour. **11**: 94. 1888; Brefeld, Untersuch. Myk. **7**: 155. *pl. 10. f. 9–11.* 1888; Sacc. Syll. Fung. **6**: 798. 1888; Stevenson, Brit. Hym. **2**: 318. 1886; Bourdot & Galzin, Soc. Myc. Fr. Bul. **25**: 34. 1909.

Illustrations: Berkeley, *loc. cit.;* Brefeld, *loc. cit.;* Coker, *loc. cit.* See Sacc. Syll. Fung. **19**: 536. 1910, for reference to others.

Fructifications minute, usually about 2 mm. in diameter, gregarious, sometimes touching, convex and barium-yellow at first, in drying becoming flattened, pezizoid and somewhat orange or hazel (resin-colored), attached by central part of the under side; spores colored like the fructification, curved, becoming 7-septate, perhaps rarely 9-septate, 15–24 × 6–9 μ.

Fructifications 1–2 mm. in diameter in specimens studied by me, contracting in drying to 1 mm., sometimes longer by confluence.

On decaying, decorticated pine and other coniferous wood. Vermont to South Carolina. Rare, but more common in Europe. August to October.

Examination of the spores should be made in case of specimens otherwise referable to *D. abietinus,* for I find by making microscopic study of specimens in published exsiccati and in herbaria that most of the specimens labeled *D. stillatus* have spores much smaller than the dimensions given above and are not more than 3-septate; such specimens are better referable to *D. deliquescens,* the species next to be considered. In the Missouri Botanical Garden Herbarium there is a specimen from Magnus under the name *D. stillatus,* and another from Berkeley in Berkeley's 'British Fungi,' No. 164, and another in Westendorp, 'Herb. Crypt.', 139; these specimens have somewhat the aspect of what they are labeled but are composed of intricately interwoven, coarse, vermiform hyphae with elongated cells containing many vacuoles and with spore-like bodies not differentiated from the hyphae; no basidia were found. These specimens are not distinguishable from the oidium stage of *D. deliquescens,* as illustrated by Tulasne[1] and by Falk.[2]

Specimens examined:

Exsiccati: Rabenhorst, Herb. Myc., 276; Ravenel, Fungi Car. **4**: 81.

Sweden: Upsala, *E. A. Burt.*

Germany: in Rabenhorst, Herb. Myc., 276.

Italy: *G. Bresadola.*

Vermont: Middlebury, *E. A. Burt.*

South Carolina: Ravenel, in Ravenel, Fungi Car. **4**: 81.

D. deliquescens (Bull.) Duby, Bot. Gall. **2**: 729. 1829; Berkeley, Outl. Brit. Fung. 290. 1860; Fries, Hym. Eur. 698. 1874; Sacc. Syll. Fung. **6**: 798. 1888; Morgan, Cincinnati Soc. Nat. Hist. Jour. **11**: 94. 1888; Bourdot & Galzin, Soc. Myc. Fr. Bul. **25**: 34. 1909.

Tremella deliquescens Bulliard, Herb. de la France **1**: 219. *pl. 455. f. 3.* 1789.—*Dacryomyces minor* Coker, Elisha Mitchell Scientif. Soc. Jour. **35**: 168. *pl. 49. f. left; pl. 64. f. 1–2.* 1920.

Illustrations: Bulliard, *loc. cit.;* Coker, *loc. cit.;* Brefeld, Untersuch. Myk. **7**. *pl. 9;* Falk, Cohn's Beitr. Biol. Pflanzen **8**. *pl. 12.*

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[1] Tulasne, Ann. Sci. Nat. Bot. III. **19**: 216–219. *pl. 13. f. 1–3.* 1853.

[2] Falk, Cohn's Beitr. Biol. Pflanzen **8**: *pl. 12. f. 3.* 1902.

f. 3. (oidium stage). 1902; Tulasne, Ann. Sci. Nat. Bot. III. **19**. *pl. 12. f. 13–19; pl. 13. f. 1–8.* (oidium stage). 1853.

Fructifications gregarious, small, pulvinate, avellaneo-ochraceous, somewhat wrinkled, becoming more flattened and resin-colored in drying; spores even, curved, simple, becoming 1–3-septate, 10–14 × 3½–5 μ.

Fructifications 1–5 mm. long, 1–3 mm. broad, usually only 1–2 mm. in diameter.

Usually on decorticated, partially decayed pine and other coniferous wood but sometimes on frondose species. Vermont to Alabama, westward to Missouri, and in Alaska. March to November. Common.

Dacryomyces deliquescens is characterized by its small, smoky, ochraceous or pale greenish ochraceous fructifications with somewhat wrinkled surface and spores 10–14 μ long and not more than 3-septate. In most of my American gatherings on pine the fructifications are smaller than European specimens. Peck compared one of my specimens with his type of *D. minor* and reported "The spores seem too large for this. Is it not small *D. deliquescens?*"

Specimens examined:

Exsiccati: Ellis, N. Am. Fungi, 333, under the name *D. stillatus;* Ravenel, Fungi Am., 135, under the name *D. stillatus;* Sydow, Myc. Germ., 555; de Thümen, Myc. Univ., 1209.

England: Epping Forest, *E. A. Burt.*

Sweden: Femsjö, *E. A. Burt.*

Germany: Brandenburg, *P. Vogel,* in Sydow, Myc. Germ., 555.

Vermont: Middlebury, 5 gatherings, *E. A. Burt;* Ripton, *E. A. Burt.*

New York: *Sartwell* (in Mo. Bot. Gard. Herb., 5301, 5302); Westport, *C. H. Peck.*

New Jersey: Newfield, *J. B. Ellis,* in Ellis, N. Am. Fungi, 333, and in de Thümen, Myc. Univ., 1209.

South Carolina: Aiken, *H. W. Ravenel,* in Ravenel, Fungi Am., 135.

Alabama: Montgomery County, *R. P. Burke, 533* (in Mo. Bot. Gard. Herb., 57371).

Wisconsin: Madison, *W. Trelease* (in Mo. Bot. Gard. Herb., 5303).

Missouri: Meramec Highlands, *L. O. Overholts* (in Mo. Bot. Gard. Herb., 43643).

Alaska: Sitka, *W. Trelease, 590* (in Mo. Bot. Gard. Herb., 57893); Yakutat, *W. Trelease, 598* (in Mo. Bot. Gard. Herb., 57894).

Under the name *Tremella subochracea* Peck described a species collected by himself on decorticated wood of *Populus monilifera* at Albany, N. Y. Study of his type shows this fungus to be a *Dacryomyces* having larger and more elongated fructifications than *D. deliquescens* and slenderer spores which curve to one side below the middle into a characteristic tapering, oblique base. Spores of similar dimensions and form occur in the type of *D. minor* Pk. but in the latter the fructifications are so deeply sunk in the very rotten wood that only the upper surface is visible and I could not come to a definite conclusion in regard to the species nor the wood in which growing. A collection of mine made at Middlebury, Vt., on *Salix*, is referable to *D. subochraceus*.

D. subochraceus (Peck) Burt, n. comb.

Tremella subochracea Peck, N. Y. State Mus. Rept. **34**: 43. 1881; Sacc. Syll. Fung. **6**: 788. 1888.—An *Dacryomyces minor* Peck, N. Y. State Mus. Rept. **30**: 49. 1879?

Type: in N. Y. State Mus. Herb.

"Small, two to four lines in diameter, forming interrupted or anastomosing lines or patches, gyrose plicate, pale-ochraceous, becoming darker in drying; spores oblong or oblong pyriform, slightly curved at the small end, colorless, .0004 in. to .0005 in. long, .00016 in. to .0002 in. broad. Decorticated wood of poplar, *Populus monilifera*. Albany. Sept. A peculiar feature of this species is its tendency to grow in lines which run together in a reticulate manner. The color is dingy-yellow or subochraceous."

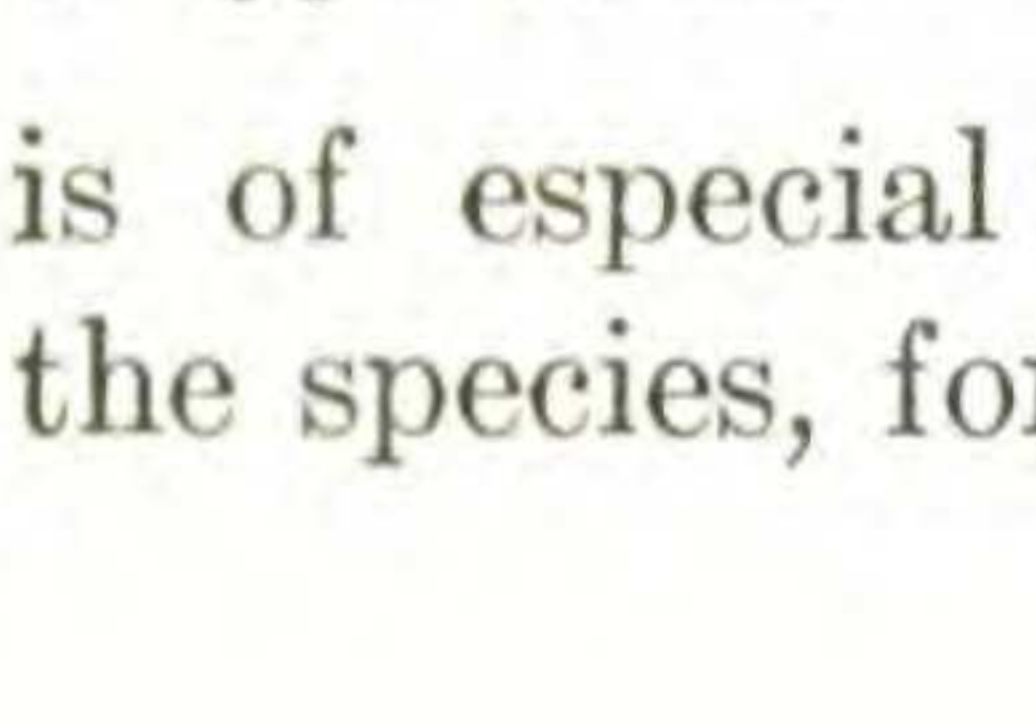

Fig. 3. *D. subochraceus*. Basidium and spores of type × 665.

The above is the original description which is of especial value in regard to the general aspect or habit of the species, for it was undoubtedly written, according to Peck's usage, with the entire gathering of material in fresh, vegetative condition before him. In the specimens constituting the type, the fructifications while small for a *Tremella*, as published by Peck, are large for a species of the *Dacryomyces deliquescens* group, being up to 7 mm. long, ½–¼ mm. broad, now fuscous in dried condition and ochraceous drab and with surface wrinkled when softened by wetting; basidia cylindric, 30 × 4 μ, with 2 obtuse, divergent sterigmata, 4½–6 × 1½ μ; spores continuous at first, mostly 1-septate, but becoming 3-septate, 9–13 × 3–4 μ, curving below into a tapering, oblique base.

On *Populus* and *Salix*. Vermont and New York. September and November. Probably rare.

Specimens examined:

Vermont: Middlebury, *E. A. Burt*.

New York: Albany, *C. H. Peck*, type (in N. Y. State Mus. Herb.).

Still another species of the *D. deliquescens* group with large fructifications of the aspect of those of *D. subochraceus* but with broader, less curved spores was published independently by Coker and by Bresadola in 1920. This species has spores of the same dimensions and form as those of *D. deliquescens* but fructifications larger, drying paler, and occurring on frondose wood only, agreeing in these features with *D. subochraceus*. The description by Coker was published a few weeks earlier than that by Bresadola, hence the name of this species, if not too close to *D. subochraceus*, is

D. Ellisii Coker, Elisha Mitchell Scientif. Soc. Jour. **35**: 167. *pl. 23. f. 11; pl. 50; pl. 63. f. 8.* 7 Jl. 1920.

D. Harperi Bresadola, Ann. Myc. **18**: 53. 31 Ag. 1920.

Illustrations: Coker, *loc. cit.*

Gregarious, bursting through the bark and forming subglobose or pulvinate, crumpled, firmly gelatinous masses, orange or wine-colored, fading to olive-buff and drying sepia and with surface plicate-gyrose, the base whitish and buried in the bark; spores hyaline under the microscope, noted by Coker as orange in spore collections, 12 × 5–6 μ.

Dried fructifications 3–5 × 2–3 mm., and 2 mm. high.

On bark of dead limbs of alder, oak, and other frondose species. Massachusetts to North Carolina and in Wisconsin and Illinois. October to February. Rare.

D. Ellisii is thicker and more pulvinate than *D. deliquescens* and has the hymenium more plicate-gyrose, broader spores, a whitish basal portion, visible upon dissecting away the outer bark, and it occurs on bark-covered limbs of frondose species; the aspect is suggestive of a *Tremella*.

Specimens examined:

Wisconsin: Madison, *W. Trelease* (in Mo. Bot. Gard. Herb., 5358).

Under the name *Dacryomyces fragiformis* (Pers.), Ellis distributed in Ell. & Ev., N. Am. Fungi, 2607, an infrequent northern species of which the specimens were collected on dead limbs of yellow birch at London, Canada, by Professor J. Dearness. *D. fragiformis* was published by Persoon as *Tremella fragiformis* and described by him as a red species occurring on dead branches of pine; in his illustration the wood is decorticated. The original description and illustration present a fungus very different from our species on birch, which is of pezizoid aspect, with yellow hymenium and white stem, and is referable to *Ditiola conformis* Karst.

Ditiola conformis Karsten, Notis. ur Sällsk pro Fauna et Flora Fennica Förh. **11**: 223. 1871; Finska Vet.-Soc. Bidrag Natur och Folk **48**: 461. 1889; Soc. Sci. Fenn. Actis **18**: 110. *pl. 6. f. 80.* 1891; Sacc. Syll. Fung. **6**: 813. 1888.

An *Guepinia Femsjoniana* Olsen in Brefeld, Untersuch. Myk. **7**: 161. *pl. 11. f. 3–5.* 1888?

Illustrations: Karsten, *loc. cit.*

Type: Type distribution in Karsten, Fungi Fenn. Exs., 629.

Fructifications erumpent through the bark, stipitate, solitary and pezizoid or cespitose and becoming confluent and then forming pulvinate masses with hymenial surface plicate, cinnamon-buff to ochraceous buff; stem expanding above, white-floccose; basidia bifurcate; spores yellow in spore collection, simple at first, then pluriguttulate, finally 1–7-septate, 18–28 × 7–9 μ.

Dried fructifications 2 × 2–4 mm.; confluent masses 5–12 × 5–7 mm.; stem up to 4 mm. long.

On fallen decaying branches of *Betula lutea* in mountain forests (reported by Karsten on *Alnus incana*). Ontario, Vermont, and New York. August, February, and March. Rare.

Reference of our specimens to *Ditiola conformis* has been confirmed by comparison with the type distribution by Karsten cited above; and they agree well with the description and illustration by Karsten although in America forming pulvinate masses by confluence of the hymenial portions of a cluster of fructifications. They are certainly cogeneric with *Ditiola radicata,* which I collected abundantly in Sweden but have not yet found in the United States.

Specimens examined:

Exsiccati: Karsten, Fungi Fenn. Exs., 629; Ell. & Ev., N. Am. Fungi, 2607, under the name *Dacryomyces fragiformis.*

Canada: Ontario, London, *J. Dearness,* in Ell. & Ev., N. Am. Fungi, 2607.

Vermont: Ripton, Abby Pond, *E. A. Burt,* and Lost Pleiad Pond, *E. A. Burt.*

New York: Catskill Mts., *C. H. Peck* (in N. Y. State Mus. Herb.).

As *Tremella stipitata,* Peck described a species which has furcate basidia and spores simple at first but becoming 1-septate. The presence of a stem places this species in the genus *Dacryomitra,* as follows:

Dacryomitra stipitata (Peck) Burt, n. comb. Plate 3, figs. 3, 4.

Tremella stipitata Peck, N. Y. State Mus. Rept. **27**: 100. *pl. 2. f. 22, 23.* 1875; Sacc. Syll. Fung. **6**: 788. 1888; as *Coryne* Coker, Elisha Mitchell Scientif. Soc. Jour. **35**: 150. 1920.—An *Dacryopsis ceracea* Coker, Elisha Mitchell Scientif. Soc. Jour. **35**: 175. *pl. 50. f. 1; pl. 65. f. 3, 4.* 1920?

Illustrations: Peck, *loc. cit.*

Type: in N. Y. State Mus. Herb.

"Head small, tremelloid, subglobose or irregular, glabrous, more or less uneven with gyrose convolutions, yellow, often changing to orange or reddish brown in drying; stem distinct, firm, solid, nearly equal, yellow, often tinged with brown at the base, rarely throughout its whole extent, sometimes divided at the top into two branches, each bearing a head"; basidia forked, about 25 × 2½ μ, bearing two divergent, obtuse sterigmata about 6–9 × 2 μ; spores hyaline, even, simple at first, becoming 1-septate, 7–9 × 3 μ.

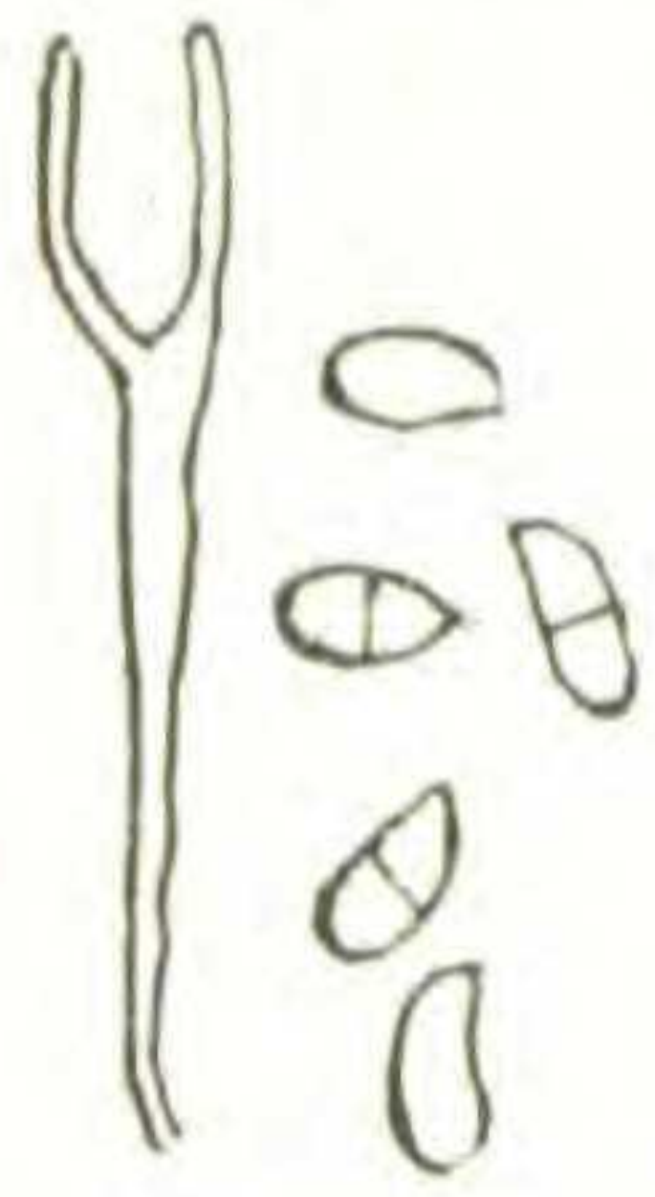

Fig. 4. *D. stipitata.* Basidium and spores of type × 665.

Fructifications 1–2 cm. high.

"On decaying wood in swamps. Forestburgh, New York. September.

"The texture of the stem is very unlike that of the head. The color of the stem generally fades to whitish or pallid in drying. The stem is sometimes slightly recurved at the top and appears to penetrate the receptacle as in the genus *Spathularia.* Barren stems occur obtusely pointed at the apex and destitute of a head."

I have the impression that I saw at one time an ample collection of the above species from New Hampshire in Farlow Herb., but I could not locate these specimens recently when desiring to make sure that their microscopic characters were like those of Peck's type. *Dacryomitra dubia* as understood by Coker appears distinct by its much larger spores. Authentic *D. dubia* Lloyd, communicated by Miss Hibbard to Lloyd, should be compared with *D. stipitata.*

A stipitate species related to the preceding was originally published as *Exidia pedunculata* B. & C. and has recently been transferred to *Dacryomyces* by Coker, but I can not reconcile the illustrations and description of his specimens with the type of *Exidia pedunculata* in its dried condition in Curtis Herbarium; it seems to me that *Dacryomyces pedunculatus* Coker is a very different species, for the original specimens of the former have slender, sulcate stems ½ mm. in diameter, standing up 1–2 mm. above the woody substratum and bearing at the top of each a small fertile head about 1 mm. in diameter, the general aspect of the whole fructification somewhat resembling that of a stipitate Myxomycete. Since the older genus *Dacryomitra* is so broadly defined that it includes Massee's genus *Dacryopsis*—which has always been superfluous—I transfer *E. pedunculata* to *Dacryomitra:*

D. pedunculata (Berk. & Curtis) Burt, n. comb.

Exidia pedunculata Berkeley & Curtis, Grevillea **2**: 19. 1873; Sacc. Syll. Fung. **6**: 773. 1888.—Not *Dacryomyces pedunculatus* Coker, Elisha Mitchell Scientif. Soc. Jour. **35**: 166. *pl. 23. f. 15; pl. 41. f. 4; pl. 62. f. 4, 5.* 1920.

Type: in Curtis Herb. and probably in Kew Herb.

About 4 mm. high, horn color; stem erect, sulcate, bearing at the apex the expanded, lobed, and at length deflexed hymenium, about 2 mm. across; at first tuberculiform and attached by a white, floccose mycelium, which at length entirely vanishes; basidia 40–50 × 3 μ, bearing 2 divergent, obtuse sterigmata up to 15 × 3 μ; spores hyaline under the microscope, thick-walled, becoming 3-septate, 13–18 × 6–8 μ.

Dried fructifications of the Curtis Herb. specimens have heads 1 mm. in diameter, and stems 1–2 mm. long, ½ mm. in diameter.

On pine wood. South Carolina.

D. pedunculata is distinct from *D. stipitata* by much larger spores which become 3-septate. In its spore characters and occurrence on pine it agrees with *D. dubia* as understood by Coker, with dried specimens of which it should be compared.

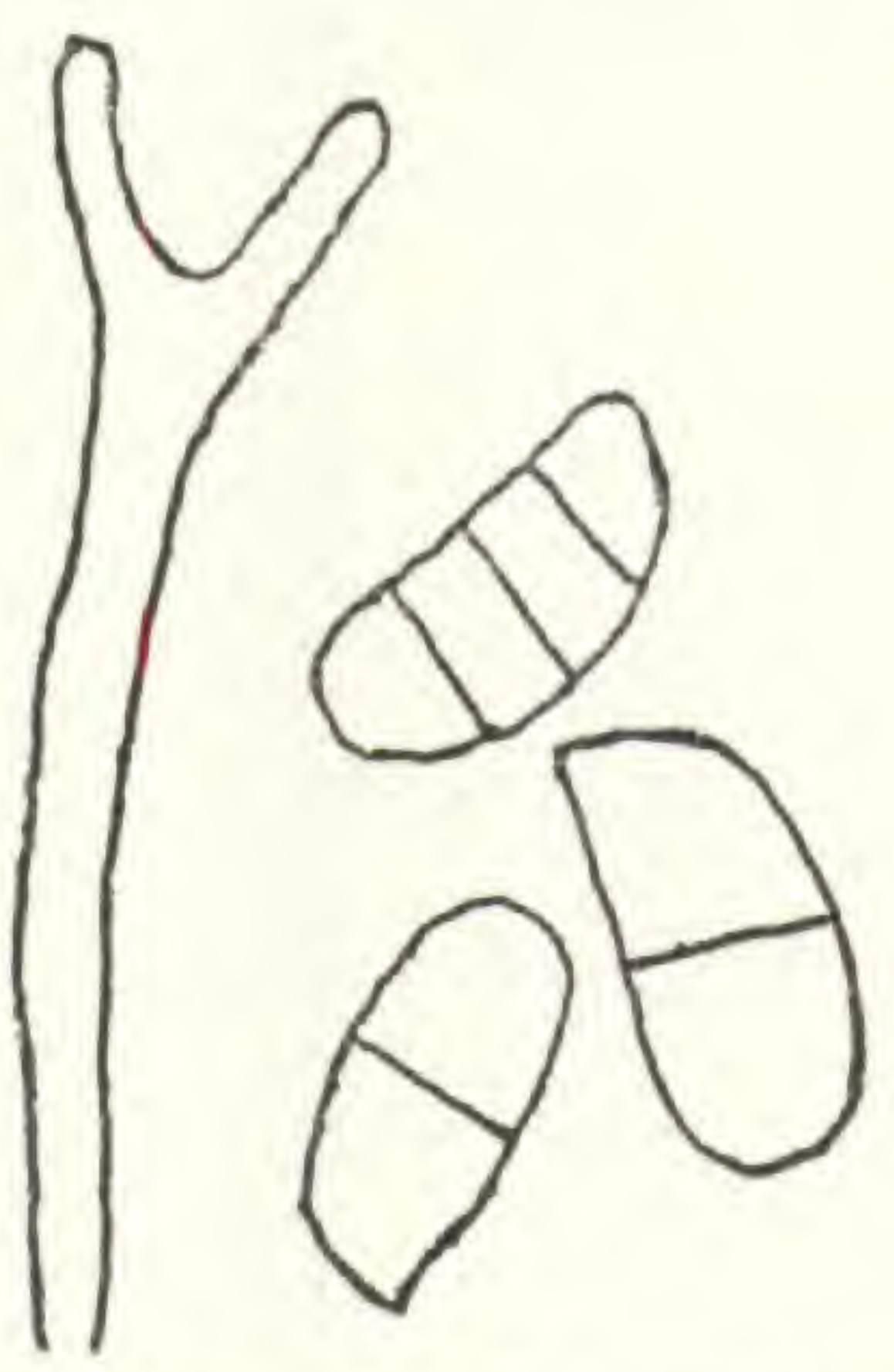

Fig. 5. *D. pedunculata.* Basidium and spores of type × 665.

Dacryopsis Ellisiana Massee, Jour. Myc. **6**: 181. *pl. 7. f. 19–21.* 1891; Sacc. Syll. Fung. **11**: 150. 1895.—See Massee, Torr. Bot. Club Bul. **28**: 519. 1901, and Durand, Torr. Bot. Club Bul. **28**: 349. *pl. 26,* and 646. 1901.

Under the above name Massee published as a Basidiomycete an erroneous account of the structure of *Coryne Ellisii* Berk., a synonym of *Stilbium giganteum* Pk. and the imperfect stage of *Holwaya gigantea* (Pk.) Durand. The material which Massee studied was collected by Ellis at Potsdam, N. Y. I made abundant gatherings of the species on a basswood log at Middlebury, Vt., finding also specimens associated with the ascosporic stage. In 1899, I compared my material with the type of *Dacryopsis Ellisiana* in Kew Herb., making preparations of the latter, which I still have, and studying them critically until convinced that no basidia were present and that my Middlebury gatherings agreed in all respects with the type. With regard to the final paragraph of Professor Durand's note to which reference is made above, it was published without my knowledge and I have never concurred in it. I studied the type, of which there is without doubt duplicate material in N. Y. Bot. Gard. Herb.; as a *Dacryopsis, Coryne Ellisii* Berk. is merely a myth of mycology.

AURICULARIACEAE

On a log of decayed balsa wood, *Ochroma lagopus*, received from Costa Rica, there developed in Dr. von Schrenk's rotting pit in the Missouri Botanical Garden, during April and May, 11 fructifications in various stages of development, of a tropical species of *Auricularia*, which seems undescribed, although specimens of the same species were collected in Cuba about 65 years ago and distributed by Wright under the name *Hirneola auriformis* (Schw.) Fr., from authentic specimens of which they certainly differ as noted by Farlow.[1]

The log on which the present gathering grew was decorticated, badly decayed, cylindric, 30 cm. in diameter by 10 cm. long, and stood erect on one end on the moist material of the rotting pit like a stump in position in the ground. Most of the first fructifications were on the least-illuminated side of the log, where they appeared at first as velvety, tubercular outgrowths 2 mm. long and 1 mm. in diameter, with obtuse ends, standing out perpendicularly from the side of the log. When 5 mm. long, the fructifications were still cylindric but curving downward at an angle of 45 degrees with the log; when 1–1½ cm. long the free end of the fructification assumed the form of a shallow cup with the concave surface facing the ground and developing an inferior hymenium, pl. 3, fig. 6. In this stage the supporting stem was attached to the center or very near the center of the upper side of the pileus. In the full-grown specimens the pendant pileus expanded in a horizontal plane eccentrically to a diameter of from 6–9 cm. but with only about one-fifth of the whole diameter between the side of the log and where the stem passes into the pileus, as shown in fig. 7. Usually a short stem is present, not more than 1 cm. long, flattened, and 1 cm. in greatest diameter where it joins the pileus. The stem contracts so greatly in drying that the dried fructifications appear sessile.

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[1] Farlow, W. G. Bibliog. Index N. Am. Fungi **1**: 305. 1905.

In May some fructifications matured on the upper end of the log. These fructifications were cup-shaped at first, becoming expanded later, and having the hymenium superior and the stem central. In both cases, whether the pileus was pendant and with its hymenium inferior or erect and with hymenium superior, the hymenium, fig. 8, was on the surface opposite or most distant from the stem. In this connection it may be recalled that before *Hirneola* was made a synonym of *Auricularia* on account of its development the former was distinguished from the latter by a superior hymenium for *Hirneola* and an inferior one for *Auricularia.*

Stem and adjacent surface of pileus are minutely velvety with short hairs when highly magnified but to the naked eye have merely the dull texture of the petal of a rose. The color of the whole plant is somewhat shell-pink in growing specimens but became darker in drying, passing through shades of vinaceous, and finally became deep brownish drab of Ridgway, somewhat translucent, and minutely velvety. The hymenium was somewhat shining and glabrous and afforded a copious spore-fall of white spores. The flesh of the interior of the pileus was highly gelatinous, but the consistency of the whole fructification was coriaceous and pliant as rubber. For this species the following name is proposed:

Auricularia rosea Burt, n. sp. Plate 3, figs. 6–8.

Type: in Mo. Bot. Gard. Herb.

Fructifications gregarious, orbicular, peltate, erect or pendant by a short stem which contracts in drying—often to a mere point of attachment—or rarely sessile from the first, soft, pliant, gelatinous within, somewhat shell-pink when growing, in drying becoming vinaceous and at length deep brownish drab, somewhat translucent, the stem and adjacent surface drying minutely velvety with hairs 20–35 × 3–4 μ; hymenium on the side opposite the stem, glabrous, even or with one or two shallow folds radiating from the stem; basidia flexuous, transversely septate, 30–40 × 4 μ; spores white in spore collection, simple, curved, 12 × 4 μ.

Fructifications 6–9 cm. in diameter; stem, if present, up to 1 cm. long when growing.

On logs of decaying balsa wood from Costa Rica, and in Cuba.

This species may be recognized by its very thin, somewhat translucent, applanate, peltate, pendant or erect pilei of shell-pink color and texture of a rose petal when growing, and by the hymenium more even than in other species.

This species should be compared with *Auricularia lenta*, described by Fries from specimens collected at Mirador, Brazil, and known to me from only the description, with which *A. rosea* agrees in several respects.

Specimens examined:

Costa Rica: on log from there, type (in Mo. Bot. Gard. Herb., 57898).

Cuba: *C. Wright, 286* (in Curtis Herb., under the name *Hirneola auriformis*).

There is another tropical *Auricularia* of more frequent occurrence in herbaria than the preceding species. It is

A. delicata (Fries) Hennings, Engler's Bot. Jahrb. **17**: 492. 1893; Farlow, Bibl. Index N. Am. Fungi **1**: 306. 1905; Lloyd, Myc. Writ. **5**. Myc. Notes 55: 784. *text f. 1177.* 1918.

Plate 3, fig. 5.

Laschia delicata Fries, Linnaea **5**: 533. 1830; Epicr. 499. 1838; R. Soc. Sci. Upsal. Acta III. **1**: 105. 1851; Sacc. Syll. Fung. **6**: 407. 1888.—*L. tremellosa* Fries, Summa Veg. Scand. 325 (foot note). 1849; R. Soc. Sci. Upsal. Acta III. **1**: 105 (as synonym). 1851; Sacc. Syll. Fung. **6**: 407. 1888.—*Auricularia tremellosa* (Fries) Patouillard, Jour. de Bot. **1**: 226. *pl. 4. f. 9, 10.* 1887; Farlow, Bibl. Index N. Am. Fungi **1**: 309. 1905.

Illustrations: Lloyd, *loc. cit.;* Patouillard, *loc. cit.*

Somewhat orbicular or shell-shaped, sessile and attached by the margin or marginate all around and pendant by a short stem attached to the upper side near the margin, drying very thin, somewhat translucent, buffy brown to fuscous, with upper surface more or less minutely velvety and somewhat veined; hymenium inferior, forming rather deep, angular pores about 1–2 mm. in diameter and about half as deep in the dried herbarium specimens, with the more prominent walls somewhat radiating from the stem; basidia flexuous, transversely septate, 30–45 × 4½–5½ μ; spores hyaline, even, simple, curved, 9–12 × 4–5½ μ.

Dried fructifications 2–4 cm. in diameter and ½ mm. thick.

On dead wood. West Indies and Mexico. December to April.

This species is distinguished by having its hymenium in irregular folds and pits, as in *Merulius tremellosus*, to so marked a degree that dried specimens are likely to be regarded as a dark species of *Merulius*, from which the slender, transversely septate basidia readily separate it.

Specimens examined:

Exsiccati: Smith, Central American Fungi, 142.

Cuba: *C. Wright* (in Curtis Herb.).

Jamaica: Balaklava, *A. E. Wight, 306, 309,* and *342* (in Farlow Herb.).

Mexico: Jalapa, *C. L. Smith,* in Smith, Cent. Am. Fungi, 142; Motzorongo, *J. G. Smith* (in Mo. Bot. Gard. Herb., 480); Orizaba, *J. G. Smith* (in Mo. Bot. Gard. Herb., 4066).

There occurs throughout North America on prostrate, decaying trunks and limbs of *Populus tremuloides* a common and conspicuous species which I have determined during many years for my correspondents as *Phlebia strigoso-zonata* (Schw.), for I had compared my collection with the type of *Merulius strigoso-zonatus* Schw. in Herb. Schweinitz. The combination *Phlebia strigoso-zonata,* with the alternative *Auricularia strigoso-zonata* (Schw.) Lloyd under his pseudonym McGinty, was finally published by Lloyd, Myc. Writ. 4: Letter 46: 6. 1913, and regarded as synonymous with a species of the Far East known as *Auricularia rugosissima* (Lév.) Bres., as well as by other names.

Auricularia rugosissima is known to me by the specimen from the Philippine Islands distributed in Sydow, Fungi Exot. Exs. 321, as well as by two other Philippine collections, viz., that from E. D. Merrill, 3508, and the other by H. M. Curran, Forestry Bureau, 8907.

There is a close resemblance in aspect and coloration between the above-mentioned specimens of *A. rugosissima* and our American *Phlebia strigoso-zonata,* but the latter has simple basidia bearing 4 spores at the apex on slender sterigmata. The demonstration of these basidia is easy, for in a fertile specimen the mature basidia protrude beyond the dense, compact, dark layer of hymenial hairs and stand out conspicuously, bearing their spores. One should disregard the difficult structure of this dark layer and run along its edge in the section for the more or less scattered exserted basidia. My demonstration has been confirmed many times by members of my classes in mycology who have used fertile specimens of this species in laboratory work in determination of genera.

Hence *Merulius strigoso-zonata* Schw. is not a species of *Auricularia* but should be included in *Phlebia* on account of the configuration of its hymenium and simple basidia. The present status of this species so far as known to me from examination of authentic specimens is as follows:

Phlebia strigoso-zonata (Schw.) Lloyd, Myc. Writ. **4**. Letter 46: 6. 1913; Kauffman, N. Y. State Mus. Bul. 179: 88. 1915.

Merulius strigoso-zonatus Schweinitz, Am. Phil. Soc. Trans. N. S. **4**: 160. 1832.—*Auricularia strigoso-zonata* (Schw.) Lloyd, Myc. Writ. **4**. Letter 46:6. 1913.—*Phlebia rubiginosa* Berkeley & Ravenel in Ravenel, Fungi Car. **3**: 23. 1855; Grevillea **1**: 146. 1873; Sacc. Syll. Fung. **6**: 499.—*P. pileata* Peck, N. Y. State Mus. Rept. **29**: 45. 1878; Sacc. Syll. Fung. **6**: 499. 1888. —An *Phlebia orbicularis* Berkeley & Curtis, Hooker's Jour. Bot. **1**: 237. 1849, and Grevillea **1**: 146. 1873?

Type: in Herb. Schweinitz.

Fructifications coriaceous, resupinate or effuso-reflexed, with the pilei more or less imbricated and laterally confluent, concentrically sulcate, zonate, somewhat tomentose, drying Natal-brown or Hay's brown, with usually 1–3 narrow, darker, alternating zones; hymenium becoming crowded with slightly elevated, radiating folds or wrinkles which are frequently interrupted, drying fuscous to fuscous-black and finally suffused with a bloom, the margin red or orange when young; basidia simple, hyaline, protruding beyond the dark zone of hymenial hairs, 12–15 × 3–4 μ, bearing 4 slender sterigmata 4½ μ long; spores white in collection on slide, flattened on one side, 6–8 × 3–4 μ.

Resupinate fructifications 1–5 cm. in diameter; reflexed fructifications have reflexed part up to 5–15 mm. long and resupinate portion up to 10 cm. in diameter.

Common on poplar, reported on beech and oak also. Ontario to South Carolina and westward to Manitoba, Minnesota, and Arkansas. August to December.

Early in its season the fructifications of this species are small, resupinate, brighter red than later, and with the hymenium nearly even and not yet fertile. The type specimen of *P. orbicularis* has the aspect of an immature specimen of *P. strigoso-zonata*, but it may prove distinct since it was collected on *Quercus*; in its native region, it should be followed through the season until it gives good spore collections in order that mature specimens may be available for comparison with *P. strigoso-zonata*. Specimens referable to the latter were distributed under various names in Ell. & Ev., N. Am. Fungi, 2731, and 3416, the latter being fertile, in Ravenel, Fungi Car. **3**: 23, and in Shear, N. Y. Fungi, 47.

Helicobasidium Peckii Burt, n. sp.

Type: in Mo. Bot. Gard. Herb. and N. Y. State Mus. Herb.

Fructification resupinate, effused, coriaceous, separable, drying with the subiculum loosely interwoven and army-brown and the hymenium avellaneous, even, dry, glabrous, not at all gelatinous or waxy; in structure 800–1200 μ thick, composed of loosely interwoven, stiff, colored hyphae 4½ μ in diameter, not nodose-septate, not incrusted, darkest next to the substratum; basidia curved or hook-shaped, becoming transversely 3-septate, with the sterigmata distributed one to each cell on the convex side; spores hyaline, even, flattened on one side, 9 × 6 μ, copious.

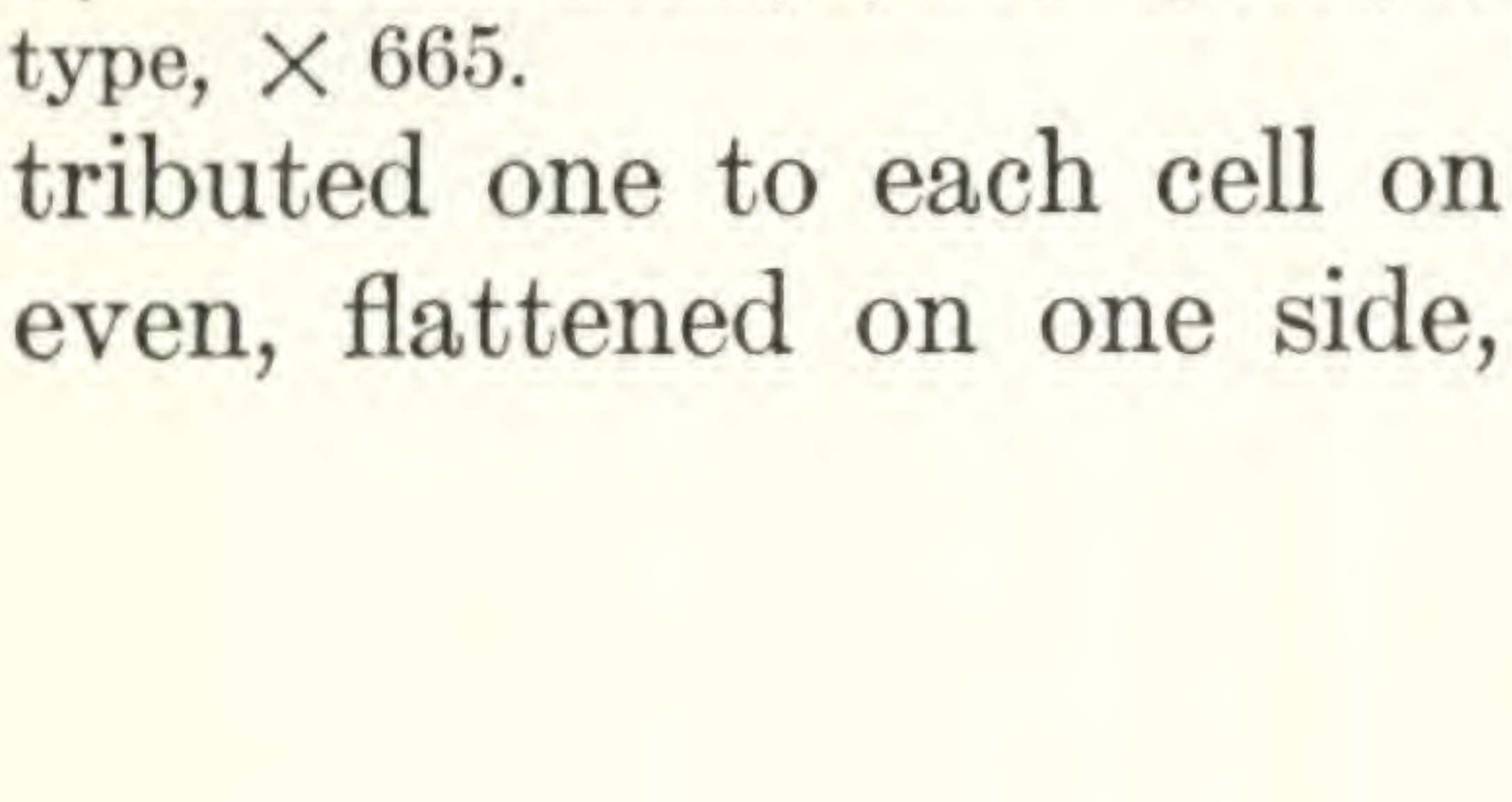

Fig. 6. *H. Peckii.* Young basidium, *b'*, mature basidia, *b*, and spores, *s*, type, × 665.

Fructification 4 cm. in diameter.

On spruce bark. Adirondack Mts., N. Y. June 7, 1905. Probably rare.

The general appearance of *H. Peckii* is that of a *Corticium*, *Coniophora*, or *Hypochnus*, with the coffee-colored hymenium covering the reddish brown subiculum. The basidia are not crowded together as closely as in most species of *Corticium* and show well their hook-shaped form when thin sections are examined. *Helicobasidium* is a small genus and has not been recorded heretofore for America. I am indebted for the privilege of studying the present specimen to Dr. H. D. House who found it among the undetermined collections of Peck, to whose memory I dedicate the species in grateful regard for assistance and friendship which began in 1879.

EXPLANATION OF PLATE

PLATE 3

All figures natural size.

Fig. 1. *Tremella concrescens.* From type of *Dacryomyces pellucidus* in Herb. Schweinitz.

Fig. 2. *Dacryomyces palmatus.* From type of *Tremella palmata* in Herb. Schweinitz.

Figs. 3, 4. *Dacryomitra stipitata* Fig. 3, from the type in N. Y. State Mus. Herb., Fig. 4, after the illustration in N. Y. State Mus. Rept. **27**. pl. 2. f. 22.

Fig. 5. *Auricularia delicata.* Collected at Motzorongo, Mexico, by J. G. Smith, in Mo. Bot. Gard. Herb.

Figs. 6–8. *Auricularia rosea.* From the type in Mo. Bot. Gard. Herb., Fig. 6, small fructification in fresh condition; Figs. 7 and 8, mature fructification in vegetative condition, 7, showing stem and adjacent surface and, 8, hymenial surface.